

REMARKS

This application has been carefully reviewed in light of the Office Action dated June 23, 2009. Claims 1, 4 to 7 and 10 to 14 are in the application, with Claims 1, 7 and 12 being independent. Claims 2, 3, 8 and 9 have been cancelled, and Claims 1, 7 and 12 have been amended. Reconsideration and further examination are respectfully requested.

Claims 1 to 3, 6 to 9 and 12 to 14 were rejected under 35 U.S.C. § 103(a) over U.S. Patent No. 7,853,465 (Ohnishi) in view of U.S. Patent No. 6,490,055 (Shimizu). Claims 4, 5, 10 and 11 were rejected under 35 U.S.C. § 103(a) over Ohnishi in view of Shimzu. Claims 2, 3, 8 and 9 have been cancelled without prejudice or disclaimer of subject matter, and without conceding the correctness of their rejection. Reconsideration and withdrawal of the rejection of the remaining claims are respectfully requested.

Independent Claim 1 as amended generally concerns a printing control apparatus for outputting print data and executing printing. The printing control apparatus includes storage means, to which rendering instructions are input, for storing the rendering instructions page by page, and first rendering means for developing the rendering instructions of each scan line into multivalued bitmap data, performing color processing of the multivalued bitmap data and converting the color processed multivalued bitmap data to n-valued bitmap data, wherein the number of bits associated with the multivalued bitmap data is greater than n. The printing control apparatus further includes second rendering means for subjecting the rendering instructions to color processing and n-value conversion processing of the color processed rendering instructions and performing rendering processing of n-valued data converted by the n-value conversion processing to generate

n-valued bitmap data, and determining means for reading out the rendering instructions that have been stored in the storage means and determining whether the rendering instructions include a rendering instruction other than overwriting for each scan line. In addition, the printing control apparatus includes control means for extracting edges of objects in the rendering instructions in each scan line and exercising control so as to cause the first rendering means to render the multivalued bitmap data between the edges if the determining means determines that the rendering instructions include a rendering instruction other than the overwriting for a scan line, and to cause the second rendering means to generate the n-valued bitmap data if the determining means determines that the rendering instructions do not include a rendering instruction other than the overwriting for the scan line. The control means causes the first rendering means or the second rendering means to develop the rendering instructions into bitmap data line by line.

Thus, among its many features, Claim 1 provides for (i) subjecting rendering instructions to color processing and n-value conversion processing of the color processed rendering instructions, and performing rendering processing of n-valued data converted by the n-value conversion processing to generate n-valued bitmap data, and (ii) exercising control so as to cause multivalued bitmap data to be rendered between the edges if it is determined that the rendering instructions include a rendering instruction other than overwriting for a scan line, and to cause the n-valued bitmap data to be generated if it is determined that the rendering instructions do not include a rendering instruction other than the overwriting for the scan line.

The applied references of Ohnishi and Shimzu are not seen to disclose or suggest at least these features.

As understood by Applicant, Ohnishi discloses a method which develops a drawing command into a multi-value bitmap image, and performs color processing on the multi-value bitmap image. See Ohnishi, steps S26-10 and S26-21 of Figure 26.

However, Ohnishi is not seen to disclose or suggest (i) subjecting rendering instructions to color processing and n-value conversion processing of the color processed rendering instructions, and performing rendering processing of n-valued data converted by the n-value conversion processing to generate n-valued bitmap data. Furthermore, Ohnishi is not seen to disclose or suggest (ii) exercising control so as to cause multivalued bitmap data to be rendered between the edges if it is determined that the rendering instructions include a rendering instruction other than overwriting for a scan line, and to cause the n-valued bitmap data to be generated if it is determined that the rendering instructions do not include a rendering instruction other than the overwriting for the scan line.

Shimizu is not seen to compensate for the deficiencies of Ohnishi. In this regard, Shimizu is seen to disclose two types of rendering, one being a band rendering and the other being a degrade rendering. Shimizu is seen to disclose that if an amount of input image is too large, then the banding process is carried out and the rendering to the band is executed. See Shimizu, column 2, lines 29 to 59.

However, Shimizu is not seen to disclose or suggest foregoing features (i) and (ii).

Claim 1 is therefore believed to be allowable over the applied references.

In addition, independent Claims 7 and 12 are method and printer driver claims, respectively, which generally correspond to apparatus Claim 1. Accordingly, Claims 7 and 12 are believed to be allowable for the same reasons.

The other claims in the application are each dependent from the independent claims and are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, it is believed that the entire application is fully in condition for allowance, and such action is courteously solicited.

No claim fees are believed due. However, should it be determined that additional claim fees are required under 37 C.F.R. 1.16 or 1.17, the Director is hereby authorized to charge such fees to Deposit Account 06-1205.

Applicant's undersigned attorney may be reached in our Costa Mesa, California office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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